Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Spectrum Horizons	)	ET Docket No. 18-21

COMMENTS OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION

The Telecommunications Industry Association ("TIA")[1] hereby submits these comments in response to the Commission's *Notice of Proposed Rulemaking* ("*Notice*")[2] in the above-captioned proceeding. TIA commends the Commission for its continuing efforts to seek out ways to enable the development of new wireless technologies by making more spectrum available. We support the Commission's efforts to support innovation in the bands above 95 GHz, and believe that the record that will be developed in this proceeding will significantly advance those efforts.

Given that the technology for practical RF communications above 95 GHz is currently at a "very nascent stage"[3] and presents challenges and opportunities that differ from other bands, we support the Commission's proposal to develop a new experimental radio license for these bands. We offer below some suggestions for potential refinements to that proposal. Regarding

[1] TIA is the leading trade association for the information and communications technology ("ICT") industry, representing companies that manufacture or supply the products and services used in global communications across all technology platforms. TIA represents its members on the full range of policy issues affecting the ICT industry and forges consensus on industry standards.

[2] Notice of Proposed Rulemaking and Order, *Spectrum Horizons*, ET Docket No. 18-21, rel. Feb. 28, 2018, FCC 18-17 ["Notice"].

[3] Notice ¶ 67.

licensing, the Commission should open at least some bands for mobile allocations to encourage the development of new technologies, while avoiding band fragmentation. We look forward to reviewing the initial comments in this docket and to offering further views in reply comments and/or at later stages of this proceeding, and as technology developments may warrant.

I. A New "Spectrum Horizons Experimental Radio License" Would Promote Innovation in Bands Above 95 GHz.

TIA appreciates the Commission's recognition that bands above 95 GHz may pose unusual challenges regarding the experimental radio service ("ERS") license process.[4] We also support the Commission's proposal to create a new class of Spectrum Horizons Experimental Radio Licenses solely for the bands above 95 GHz.[5] The proposed Spectrum Horizons ERS license appears to blend the longer term length and wider research program benefits of program licenses with the non-disclosure protection and broader eligibility benefits of conventional licenses. In general, this approach seems well-suited for bands such as these with little-to-no incumbent use nor any current service rules, in which we agree that private industry and small businesses in particular may contribute significantly to innovation.

Eligibility. Expanding eligibility for a new research-program-type license beyond manufacturers, universities, etc. to encompass all "qualified persons" may carry some risk of harmful interference from persons not truly "qualified." However, the Commission's proposal to require a narrative statement with technical details[6] would likely address most of that risk. Even so, to the extent that neither the current proposal nor the existing rules already require it, the Commission should consider requiring any applicant not covered by the existing program license

[4] Notice ¶¶ 67-69.

[5] Notice ¶¶ 70-81.

[6] Notice ¶ 76.

eligibility categories[7] to provide a written description of their technical qualifications and prior experience in RF issues. This could potentially even include attaching the *curricula vitae* or resumés of key individuals. In addition, since the Commission is proposing to permit experimental licenses to be transferred to encourage entrepreneurship,[8] the qualifications of any license transferee should also be ascertained as part of any transfer process.

Market trials. The Commission is also wise to recognize that permitting limited market trials will help to establish the commercial viability of services in these newly-opened bands.[9] Procedurally, allowing the Commission to approve any licensee's market experiment, including the number of devices, on a case-by-case basis seems like a cautious but sensible path for the Commission to follow as the agency experiments with allowing expanded pre-authorization market sales.[10] However, the Commission should clarify that an ERS licensee may seek such case-by-case approval at any time (or multiple times) after the experimental license has been granted, not just at the time of license application. While we understand this to be the case from the text of proposed section 5.704, the Notice suggests that the Commission seeks "to permit *license applicants* to specific the number of devices that may be sold"[11] rather than "licensees."

Length of time, interim report, and geographic area. Given the nascent state of technology in these bands, we agree that allowing a 10-year initial experimental license period with 5-year interim reporting requirement – as opposed to the 2-year or 5-year periods applicable to all other classes of ERS licenses – would help provide innovators with a stable environment to

[7] 47 C.F.R. § 5.302.

[8] Notice ¶ 81.

[9] Notice ¶ 73.

[10] Proposed 47 C.F.R. §§ 5.704(a), (c).

[11] Notice ¶ 74.

test new technologies.[12] However, the Commission should be careful to ensure that this privilege is not abused, nor should it excessively inhibit experiments by other interested parties in a particular band. For example, an applicant seeking to occupy a 2 GHz or 3 GHz swath of spectrum on a nationwide basis for 10 years could significantly impede innovation by others seeking to develop similar technologies in that band, or in nearby bands.

The Commission should therefore consider applying a geographic area limitation by rule to wideband experimental licenses so that other applicants may experiment in different cities, and/or should carefully monitor the ecosystem while reviewing narrative statements to ensure that many wideband experimentation opportunities remain open throughout the country. Geographic restrictions may be appropriate given that bands above 95 GHz are probably unsuitable for very-long-distance (inter-city) communications. However, the Commission could potentially permit wider-area experimental applications to be granted after a sufficient showing and/or through a waiver process.

II. The Commission Should Adopt Some Mobile Allocations And Avoid Band Fragmentation.

As the Commission recognizes, it must strike an appropriate balance between allowing some potential services to deploy in these bands while not "constrain[ing] the ways in which the bands above 95 GHz can develop or foreclose innovation through too-rigid service rules."[13] TIA fully recognizes that this is not an easy balance to strike. However, we recommend that the Commission consider designating a limited number of bands for mobile use, thus adopting a more flexible approach for all technologies.

[12] Notice ¶ 79.

[13] Notice ¶ 27.

At a high level, the Commission is proposing to establish service rules for 102.2 GHz on a licensed, fixed point-to-point basis, plus 15.2 GHz of spectrum on an unlicensed basis. In total, this constitutes nearly two thirds (65.2%) of the available spectrum in the bands between 95 and 275 GHz. The Commission is proposing relatively conservative rules based on licensed, fixed point-to-point links for much of that spectrum, but currently does not propose to allow any mobile use. While cognizant of the fact that technology is at an early stage, and recognizing the concerns of the Commission regarding the ability of mobile services to protect fixed services in the higher frequency bands, the adoption of some mobile designations in the bands above 95 GHz could promote further opportunities for mobile innovation. TIA recommends that the Commission consider mobile designations in bands that have minimal sharing concerns with other services and are unlikely to interfere with the frequencies designated in the NPRM for fixed services terrestrial backhaul.

Finally, the Commission should generally keep in mind the need to avoid band fragmentation and prioritize the allocation of large, contiguous blocks of spectrum. However, specific details may depend upon other proposals submitted. We look forward to reviewing specific proposals for particular bands or new technologies, and to providing further input in reply comments and/or at further stages of this proceeding.

III. Conclusion

TIA appreciates the work of the Commission on this proceeding, and its continuing efforts to promote new technology by making more spectrum available. We look forward to reviewing the initial comments and offering further input at later stages of this proceeding.

Respectfully submitted,

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